

Abstract of the Disclosure

A workpiece is processed with a plasma in a vacuum plasma processing chamber by exciting the plasma at several frequencies such that the excitation of the plasma by the several frequencies simultaneously causes several different phenomena to occur in the plasma. The chamber includes central top and bottom electrodes and a peripheral top and/or bottom electrode arrangement that is either powered by RF or is connected to a reference potential by a filter arrangement that passes at least one of the plasma excitation frequencies to the exclusion of other frequencies.